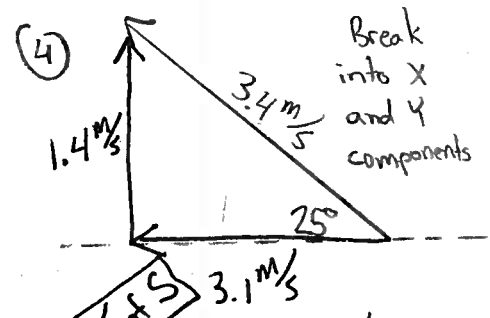
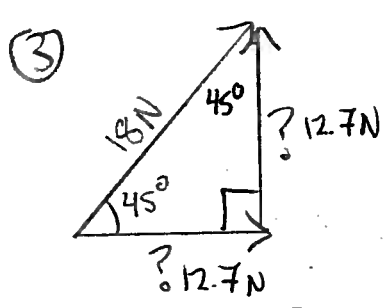
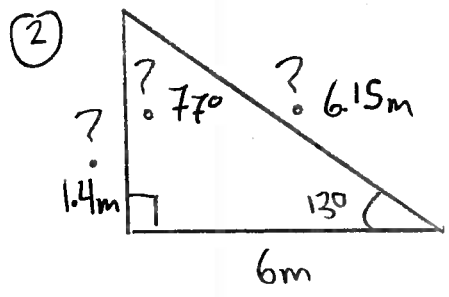
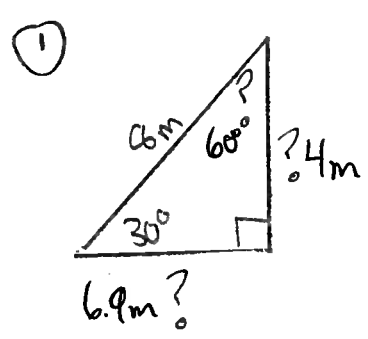


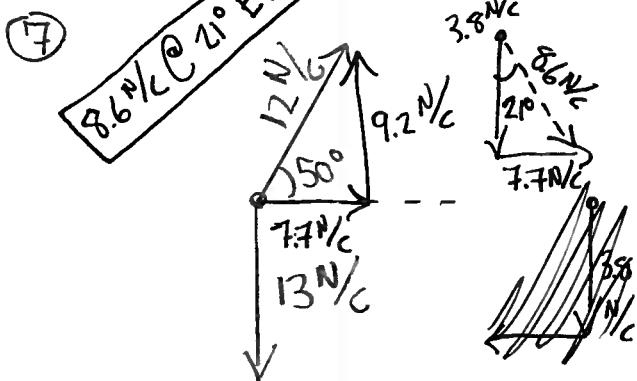
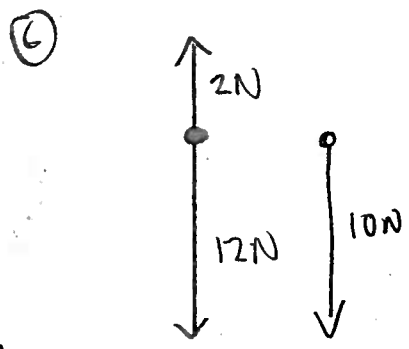
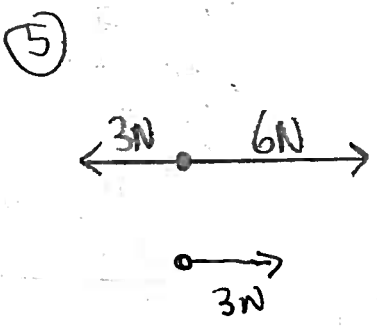
# What's Your Vector, Victor?

I stubbed my toe and now I can hardly move it. What should I do Doctor?

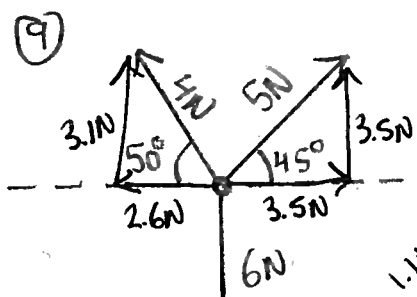
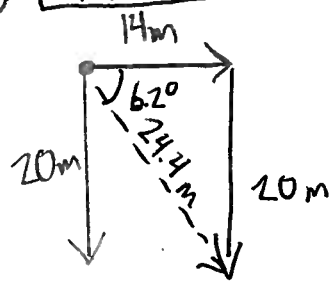
SOH  
CAH  
TOA



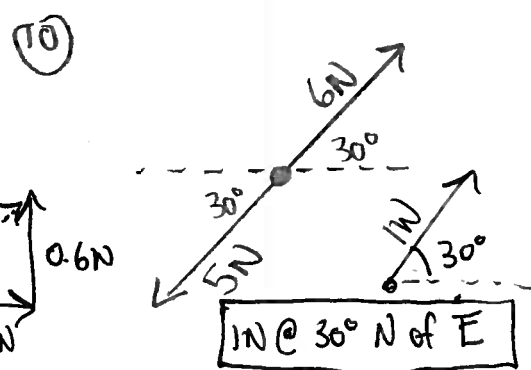
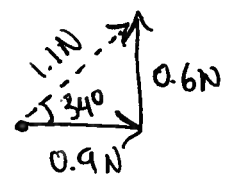
Add the following Vectors



⑧ 24.4m @ 6.2° S of E



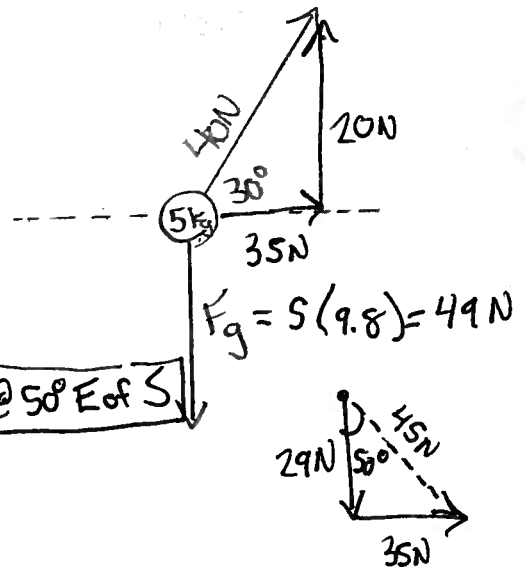
1.1N @ 34° N of E



Applications

$$f = ma$$

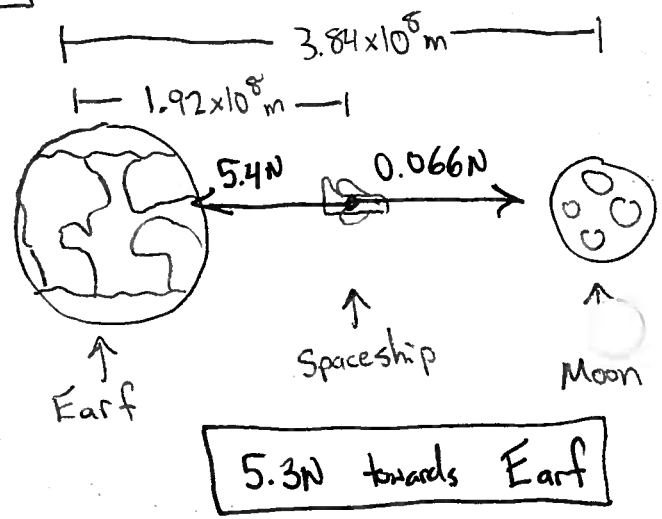
(11) A pendulum has a mass of 5kg and experiences a force of 40N from the rope attached to it. The rope is attached at an angle of  $30^\circ$  above the horizontal. What is the net force on the pendulum? What is its acceleration?



$$G = 6.67 \times 10^{-11}$$

$$F_g = \frac{Gm_1m_2}{d^2}$$

(12) A 500kg space ship is moving between the earth and the moon. The distance from the earth to the moon is  $3.84 \times 10^8\text{m}$  and the ship is  $1.92 \times 10^8\text{m}$  from the earth. The earth has a mass of  $5.97 \times 10^{24}\text{kg}$  and the moon has a mass of  $7.32 \times 10^{22}\text{kg}$ . What is the net force experienced by the space ship?



$$E = \frac{kq}{d^2}$$

(13) A  $+17\mu\text{C}$  charge is located at the origin. A  $-18\mu\text{C}$  charge is located at 4cm on the X axis. What is the electric field at 5cm on the Y axis?

